

**Anakreōn (Pharm.) (after 100 BCE?)**

Wrote *On Root-Cutting* (*peri rhizotomikēs*), recording that some called “horse-celery” by the name *Smurneion* (*Schol. Nik. Thēr.* 597c). Besides the poet, a rare name, cited at Kition and Dēlos (3rd c. BCE: *LGPV* 1.35) and Athens (1st/2nd cc. CE: 2.28).

*RE* 1.2 (1894) 2050 (#2), M. Wellmann.

GLIM

**Anania of Shirak (Arm.: Anania Širakac’i) (ca 610 – ca 685 CE)**

Distinguished mathematician and astronomer, known as the “father of the exact sciences” in Armenia. Born in the village of Anania in Shirak around the time HĒRAKLEIOS reopened the school of Constantinople, he traveled widely to satisfy his thirst for scientific learning, and studied under several masters before finding ΤΥΚΗΙΚΟΣ in Trebizond with whom he studied for eight years. Upon returning home he set up his own school, presumably near Shirak; he claims that until this time no Armenian knew philosophy nor were any books on science to be found. Samuēl of Ani (ca 1100–1180) names the following as his students: Hermon, Trdat, Azaria, Ezekiel, and Kirakos. The tradition that he was buried in the village of Anavank’ is more likely to be an etiology for the name of the village.

Although more than half are now lost, more than 40 scientific works have been attributed to Anania in the fields of cosmology, astronomy, mathematics, geography, and chronology. Mačewosyan has demonstrated that a number of these works once formed a textbook, completed in 666, known as the *K’nnonikon* (Gk. *Kanonikon*), and comprised all the major sciences known in the medieval curriculum. His work, *A History of the Universe*, based largely on the *Hexaemeron* of BASIL OF CAESAREA, served for centuries in Armenia as the basic textbook for science.

*On Heaven and Earth* is a compendium of what was known in the Classical Greek tradition: e.g., the earth was a sphere and that the *kosmos* turned eternally on its concentric spheres around the earth at its center. Curiously, despite his mathematical interests, Anania did not seem interested in calculating meridians, longitudes or latitudes. Unlike many of his fellow Christians, he adhered to a **Peripatetic** system of the world. Anania maintained belief in a transcendental universe, and was guilty of occasional flights into mystical speculation.

Of his astronomical works, *Concerning the Skies* is based on Basil, and a work called *On Clouds and Signs* seems rather a conglomeration of Basil and ARATOS. Recent scholarship has also attributed to Anania the Armenian translation of Aratos, *Phainomena*; both are certainly works of the HELLENIZING SCHOOL at whose height Anania was most active.

Seven mathematical treatises treat the fundamentals of addition, subtraction, multiplication, division, odd and even numbers. These works, complete with long lists of tables, are considered the oldest extant writings of their kind in the world, although they are of much less sophistication than Greek mathematical thought such as found in EUCLID’s algebraic and geometrical imagination. Anania considered mathematics to be the “mother of all sciences” and only through it can the human mind apprehend that all natural phenomenon presents itself in the language of mathematics, under definitely structured forms, and develops or moves according to definite patterns or laws. Although a confirmed scientist, Anania was not free of the magical side of contemporary mathematics.

*On Questions and Answers* contains 24 arithmetical problems and their solutions, as does *Fun*

with *Arithmetic* (Arm. *Xraxčanakank*, lit., “Things for festal occasions”). These too are possibly the oldest extant texts of their kind in the world. Two short treatises, one on the numerology of the Old and New Testaments, and another on the allegorical significance or power of numbers also survive. A number of fragmentary works are considered to have been part of his lost mathematical textbook, *Arithmetic: Texts for Four Applications*.

One of the most important of Anania’s works is his *Geography* (Arm., *Ašxarhač ovc*), which was once thought to be the work of MOSES OF XOREN. This work, which survives in a long and short recension, is explicitly based on the lost *Geography* of PAPPOS OF ALEXANDRIA, and also makes use of PTOLEMY. It is a rambling, epitomized descriptive geography, covering all the then-known world, from Spain to China, offering nothing new except for some few details about Asia Minor. Nearly one quarter is devoted specifically to the Caucasus, Armenia, and the Sasanian empire, providing much information from local otherwise unknown sources, and comprising an invaluable source for the historical geography of these areas, but especially Armenia. Another work, *On the Languages of the World*, lists and locates the speakers of the 72 known world languages.

Anania’s chronological works survive mostly in fragmentary form. *The Book of Caesars*, up to the year 685/6, is essentially a poor translation of Greek sources. In addition to a short treatise entitled *On Calendars*, fragments of a treatise survive in which he seems to have worked out a universal schema of calendar calculation. Short pieces, on the date of Christmas and on the date of Easter, and a comparison of the Armenian and Hebrew calendars, also survive.

Other surviving works include a book on *Weights and Measures*, which is essentially a very loose, inaccurate translation of EPIPHANIOS OF CYPRUS. Two related opuscles, *On Measures* and *On Weights and Weighers*, also raise certain ethical issues. A short essay, *On the Names of Gems and their Colors*, also survives. A treatise *On Music* is of disputed authorship. Other untitled works on meteorology and on foretelling the weather remain unedited.

Anania’s works served as the curriculum standard in the medieval Armenian academy, as well as the basis for many later Armenian writers who devoted themselves to science in the Middle Ages, of whom the more famous were Anania of Narek, Yovhannēs Koser, Grigor Magistros, Yovhannēs Sarkavag, Samuēl Anec’i, Yovhannēs Erznkac’i, Grigor Datevac’i, etc.

**Ed.:** Ašot Abrahamyan, *Anania Širakač’u Matenagrutjunē* [The Works of Anania Širakač’i] (1944);

Robert H. Hewsen, *The Geography of Ananias of Širak (Ašxarhač ouč)*. *The Long and the Short Recensions* (1992).

Hakob Manandyan, “Les mesures attribuées à Anania Širakač’i convertées en poids et mesures actuels,” *Revue des études arméniennes* 5 (1968) 369–419; Robert H. Hewsen, “Science in Seventh Century Armenia: Ananias of Širak,” *Isis* 49 (1968) 32–45; Jean-Pierre Mahé, “Quadrivium et cursus d’études au VIIe siècle en Arménie et dans le monde byzantin d’après le *Kmmikon* d’Anania Širakač’i,” *Travaux et Mémoires* 10 (1987) 159–206; A.S. Mačewosyan, “Anania Širakač’u ‘Ašxarhagruč’yan’ het kapvač’ mi k’ani harč’er [Some Questions relative to the *Geography* of Anania of Shirak],” *Uraber* 9 (1979) 73–86.

Edward G. Mathews, Jr.

## Anastasios (200? – 540 CE)

AETIOS OF AMIDA 12.47 (p. 681 Cornarius) preserves his gout remedy, containing **shelf-fungus**, aloes, cinnamon, gentian (cf. GENTHIOS), **malabathron**, parsley, spikenard, etc. This Christian name is attested from ca 200 CE (*LGP*N, esp. 3A.36, 3B.33), but rare before